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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,832	03/04/2004	Koichi Fujimori	1035-497	3859
23117	7590	06/29/2004		
NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714			EXAMINER CHUNG, DAVID Y	
			ART UNIT 2871	PAPER NUMBER

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/791,832

Applicant(s)

FUJIMORI ET AL.

Examiner

David Y. Chung

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,5 and 8-14 is/are rejected.
- 7) ☒ Claim(s) 2-4,6 and 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/932,027.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5 and 9 rejected under 35 U.S.C. 102(b) as being anticipated by Kishimoto (U.S. 6,072,557).

As to claim 1, Kishimoto discloses a color liquid crystal display apparatus having a polymer wall covering a boundary portion between two adjacent color filter resin layers. Note in figure 1A, the variable thickness in the liquid crystal layer created by the polymer wall 18. Column spacers 22 maintain a cell gap and are provided where the liquid crystal layer is thinnest. See column 7, lines 6-53.

As to claim 5, figure 1A of Kishimoto shows a color filter layer 12 and black matrix 14. The column spacers 22 are provided on the black matrix 14.

As to claim 9, Kishimoto discloses a vertically aligned liquid crystal. Note the liquid crystal molecules 42 in figures 1A and 2A. See column 7, lines 2-5.

Claims 11 and 12 rejected under 35 U.S.C. 102(b) as being anticipated by Shimada (U.S. 6,016,181).

Shimada discloses a liquid crystal display having column spacers that control the gap between the substrates and absorb or reflect visible light. Note in figure 1, the transparent pixel electrode 4 formed on substrate 2 and the transparent counter electrode 5 formed on substrate 1. An alignment layer 7 is formed on the counter electrode 5 over the entire substrate 1. An alignment layer 6 is formed on the pixel electrode 4 over the entire substrate 2. Column spacer 30 is formed on the pixel and counter electrodes as well as the alignment layers. See column 4, lines 1-24.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Kishimoto (U.S. 6,072,557).

As to claim 8, Kishimoto does not disclose that the column spacers are black. However, it would have been obvious to one of ordinary skill in the art at the time of

invention to make the column spacers black in order to provide additional light shielding in the gaps between the display areas.

As to claim 10, Kishimoto does not disclose that the column spacers account for 0.05 % to 3.0 % of the panel area. However, it would have been obvious to one of ordinary skill in the art at the time of invention to control the cross-sectional area of the spacers to account for 0.05 % to 3.0 % of the panel area in order to provide sufficient strength for maintaining the cell gap without significantly reducing the aperture ratio.

Claims 13 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Tamai et al. (U.S. 5,793,457) in further view of Bahadur (Liquid Crystals 1990).

As to claim 13, Tamai et al. discloses a method of manufacturing a liquid crystal display wherein the light-shielding film is used to form column spacers. Note in figure 1(a), the substrate 21, the light-shielding layer 23, and photosensitive resin 27'. The apertures in the light-shielding layer 23 are used as a mask during the exposure process shown in figure 1(a). Tamai et al teaches forming the column spacers 27 by removing non-exposed portions of the photo-resist. See column 10, lines 34-67.

Tamai et al. does not disclose providing a color filter. However, Bahadur shows that providing a color filter was conventional for forming a full color display. See pp.

178-181. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a color filter in order form a full color display.

As to claim 14, Tamai et al. shows in figure 1(a) that the photosensitive material 27' is illuminated from a side of substrate 21 that does not have a color filter. Tamai et al. does not disclose that the photosensitive material 27' is a black photosensitive material. However, because of the apertures in the light-shielding film 23, it would have been necessary to form the column spacers from black photosensitive material in order to prevent light leakage. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to apply a black photosensitive material to form the column spacers in order to prevent light leakage.

Allowable Subject Matter

Claims 2-4, 6 and 7 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

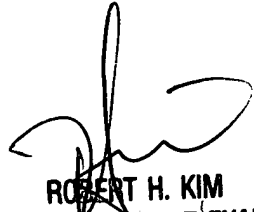
As to claims 2-4, the prior art did not disclose a transfective display having a liquid crystal layer varying in thickness in a single pixel or from one pixel to another.

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As to claims 5 and 6, Kishimoto does not disclose providing column spacers on the blue color filters, or providing column spacers in apertures in the black matrix. Examiner does not believe it would have been obvious to modify the structure of Kishimoto in this manner.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Chung whose telephone number is (571) 272-2288. The examiner can normally be reached on Monday-Friday from 8:30 am to 5:00 pm.



ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
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David Chung
GAU 2871
06/24/04